Form 5500

Department of the Treasury
Internal Revenue Service

Department of Labor
Employee Benefits Security Administration

Pension Benefit Guaranty Corporation

Annual Return/Report of Employee Benefit Plan

This form is required to be filed for employee benefit plans under sections 104 and 4065 of the Employee Retirement Income Security Act of 1974 (ERISA) and sections 6057(b) and 6058(a) of the Internal Revenue Code (the Code).

▶ **Complete all entries in accordance with the instructions to the Form 5500.**

OMB Nos. 1210-0110
1210-0089

2018

This Form is Open to Public Inspection

Part I Annual Report Identification Information

For calendar plan year 2018 or fiscal plan year beginning 01/01/2018 and ending 12/31/2018

A This return/report is for:
- [ ] a multiemployer plan
- [ ] a multiple-employer plan (Filers checking this box must attach a list of participating employer information in accordance with the form instructions.)
- [X] a single-employer plan
- [ ] a DFE (specify) ____

B This return/report is:
- [ ] the first return/report
- [ ] the final return/report
- [ ] an amended return/report
- [ ] a short plan year return/report (less than 12 months)

C If the plan is a collectively-bargained plan, check here. . . . . ▶ [ ]

D Check box if filing under:
- [X] Form 5558
- [ ] automatic extension
- [ ] the DFVC program
- [ ] special extension (enter description)

Part II Basic Plan Information—enter all requested information

1a Name of plan
APPLIED SYSTEMS, INC. RETIREMENT SAVINGS PLAN

1b Three-digit plan number (PN) ▶ 001

1c Effective date of plan 01/01/1987

2a Plan sponsor's name (employer, if for a single-employer plan)
Mailing address (include room, apt., suite no. and street, or P.O. Box)
City or town, state or province, country, and ZIP or foreign postal code (if foreign, see instructions)
APPLIED SYSTEMS, INC.

200 APPLIED PARKWAY
UNIVERSITY PARK, IL 60484

2b Employer Identification Number (EIN)
20-5511045

2c Plan Sponsor's telephone number
708-534-5575

2d Business code (see instructions)
541519

Caution: A penalty for the late or incomplete filing of this return/report will be assessed unless reasonable cause is established.

Under penalties of perjury and other penalties set forth in the instructions, I declare that I have examined this return/report, including accompanying schedules, statements and attachments, as well as the electronic version of this return/report, and to the best of my knowledge and belief, it is true, correct, and complete.

SIGN HERE	Filed with authorized/valid electronic signature.	10/03/2019	SUSAN BOUDREAU
	Signature of plan administrator	Date	Enter name of individual signing as plan administrator
SIGN HERE	Filed with authorized/valid electronic signature.	10/03/2019	JACQUELINE REIDY
	Signature of employer/plan sponsor	Date	Enter name of individual signing as employer or plan sponsor
SIGN HERE			
	Signature of DFE	Date	Enter name of individual signing as DFE

3a	Plan administrator's name and address [X] Same as Plan Sponsor	**3b**	Administrator's EIN
		3c	Administrator's telephone number
4	If the name and/or EIN of the plan sponsor or the plan name has changed since the last return/report filed for this plan, enter the plan sponsor's name, EIN, the plan name and the plan number from the last return/report: **a** Sponsor's name **c** Plan Name	**4b**	EIN
		4d	PN
5	Total number of participants at the beginning of the plan year	**5**	1431
6	Number of participants as of the end of the plan year unless otherwise stated (welfare plans complete only lines **6a(1), 6a(2), 6b, 6c,** and **6d**).		
a(1)	Total number of active participants at the beginning of the plan year	**6a(1)**	1223
a(2)	Total number of active participants at the end of the plan year	**6a(2)**	1287
b	Retired or separated participants receiving benefits	**6b**	2
c	Other retired or separated participants entitled to future benefits	**6c**	229
d	Subtotal. Add lines **6a(2)**, **6b**, and **6c**	**6d**	1518
e	Deceased participants whose beneficiaries are receiving or are entitled to receive benefits.	**6e**	2
f	Total. Add lines **6d** and **6e**.	**6f**	1520
g	Number of participants with account balances as of the end of the plan year (only defined contribution plans complete this item)	**6g**	1389
h	Number of participants who terminated employment during the plan year with accrued benefits that were less than 100% vested	**6h**	22
7	Enter the total number of employers obligated to contribute to the plan (only multiemployer plans complete this item)	**7**	

8a If the plan provides pension benefits, enter the applicable pension feature codes from the List of Plan Characteristics Codes in the instructions:

2E 2J 2F 2G 2K 3D 2S 2T

b If the plan provides welfare benefits, enter the applicable welfare feature codes from the List of Plan Characteristics Codes in the instructions:

9a Plan funding arrangement (check all that apply)		**9b** Plan benefit arrangement (check all that apply)	
(1)	[X] Insurance	**(1)**	[X] Insurance
(2)	[ ] Code section 412(e)(3) insurance contracts	**(2)**	[ ] Code section 412(e)(3) insurance contracts
(3)	[X] Trust	**(3)**	[X] Trust
(4)	[ ] General assets of the sponsor	**(4)**	[ ] General assets of the sponsor

10 Check all applicable boxes in 10a and 10b to indicate which schedules are attached, and, where indicated, enter the number attached. (See instructions)

a Pension Schedules

- **(1)** [X] **R** (Retirement Plan Information)
- **(2)** [ ] **MB** (Multiemployer Defined Benefit Plan and Certain Money Purchase Plan Actuarial Information) - signed by the plan actuary
- **(3)** [ ] **SB** (Single-Employer Defined Benefit Plan Actuarial Information) - signed by the plan actuary

b General Schedules

- **(1)** [X] **H** (Financial Information)
- **(2)** [ ] **I** (Financial Information – Small Plan)
- **(3)** [X] 1 **A** (Insurance Information)
- **(4)** [X] **C** (Service Provider Information)
- **(5)** [X] **D** (DFE/Participating Plan Information)
- **(6)** [ ] **G** (Financial Transaction Schedules)

Part III Form M-1 Compliance Information (to be completed by welfare benefit plans)

11a If the plan provides welfare benefits, was the plan subject to the Form M-1 filing requirements during the plan year? (See instructions and 29 CFR 2520.101-2.) ..... ☐ Yes ☐ No

If "Yes" is checked, complete lines 11b and 11c.

11b Is the plan currently in compliance with the Form M-1 filing requirements? (See instructions and 29 CFR 2520.101-2.) ..... ☐ Yes ☐ No

11c Enter the Receipt Confirmation Code for the 2018 Form M-1 annual report. If the plan was not required to file the 2018 Form M-1 annual report, enter the Receipt Confirmation Code for the most recent Form M-1 that was required to be filed under the Form M-1 filing requirements. (Failure to enter a valid Receipt Confirmation Code will subject the Form 5500 filing to rejection as incomplete.)

Receipt Confirmation Code_____

SCHEDULE A (Form 5500)

Department of the Treasury
Internal Revenue Service

Department of Labor
Employee Benefits Security Administration

Pension Benefit Guaranty Corporation

Insurance Information

This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA).

▶ **File as an attachment to Form 5500.**

▶ Insurance companies are required to provide the information pursuant to ERISA section 103(a)(2).

OMB No. 1210-0110

2018

This Form is Open to Public Inspection

For calendar plan year 2018 or fiscal plan year beginning 01/01/2018 and ending 12/31/2018

A Name of plan
APPLIED SYSTEMS, INC. RETIREMENT SAVINGS PLAN

B Three-digit plan number (PN) ▶ 001

C Plan sponsor's name as shown on line 2a of Form 5500
APPLIED SYSTEMS, INC.

D Employer Identification Number (EIN)
20-5511045

Part I **Information Concerning Insurance Contract Coverage, Fees, and Commissions** Provide information for each contract on a separate Schedule A. Individual contracts grouped as a unit in Parts II and III can be reported on a single Schedule A.

1 Coverage Information:

(a) Name of insurance carrier
MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

(b) EIN	**(c)** NAIC code	**(d)** Contract or identification number	**(e)** Approximate number of persons covered at end of policy or contract year	Policy or contract year	
				(f) From	**(g)** To
04-1590850	65935	SF 51215	1520	01/01/2018	12/31/2018

2 Insurance fee and commission information. Enter the total fees and total commissions paid. List in line 3 the agents, brokers, and other persons in descending order of the amount paid.

(a) Total amount of commissions paid	**(b)** Total amount of fees paid
0	0

3 Persons receiving commissions and fees. (Complete as many entries as needed to report all persons).

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

Part II Investment and Annuity Contract Information

Where individual contracts are provided, the entire group of such individual contracts with each carrier may be treated as a unit for purposes of this report.

4	Current value of plan's interest under this contract in the general account at year end	4	
5	Current value of plan's interest under this contract in separate accounts at year end	5	29688

6 Contracts With Allocated Funds:

a State the basis of premium rates ▶

b	Premiums paid to carrier	6b	
c	Premiums due but unpaid at the end of the year	6c	
d	If the carrier, service, or other organization incurred any specific costs in connection with the acquisition or retention of the contract or policy, enter amount.	6d	

Specify nature of costs ▶

e Type of contract: (1) ☐ individual policies (2) ☐ group deferred annuity

(3) ☐ other (specify) ▶

f If contract purchased, in whole or in part, to distribute benefits from a terminating plan, check here ▶ ☐

7 Contracts With Unallocated Funds (Do not include portions of these contracts maintained in separate accounts)

a Type of contract: (1) ☐ deposit administration (2) ☐ immediate participation guarantee

(3) ☐ guaranteed investment (4) ☒ other ▶ GROUP ANNUITY CONTRACT

b	Balance at the end of the previous year			7b	8812060
c	Additions: (1) Contributions deposited during the year	7c(1)	8237812		
	(2) Dividends and credits	7c(2)	0		
	(3) Interest credited during the year	7c(3)	342210		
	(4) Transferred from separate account	7c(4)	2500508		
	(5) Other (specify below)	7c(5)	1857249		
	▶ LN INT, LN PRIN, LOAN DEFAULT, ROLL				
	(6) Total additions			7c(6)	12937779
d	Total of balance and additions (add lines **7b** and **7c(6)**)			7d	21749839
e	Deductions:				
	(1) Disbursed from fund to pay benefits or purchase annuities during year	7e(1)	460822		
	(2) Administration charge made by carrier	7e(2)	15365		
	(3) Transferred to separate account	7e(3)	9462852		
	(4) Other (specify below)	7e(4)	66558		
	▶ LN DISTRIB				
	(5) Total deductions			7e(5)	10005597
f	Balance at the end of the current year (subtract line **7e(5)** from line **7d**)			7f	11744242

Part III Welfare Benefit Contract Information

If more than one contract covers the same group of employees of the same employer(s) or members of the same employee organizations(s), the information may be combined for reporting purposes if such contracts are experience-rated as a unit. Where contracts cover individual employees, the entire group of such individual contracts with each carrier may be treated as a unit for purposes of this report.

8 Benefit and contract type (check all applicable boxes)

a ☐ Health (other than dental or vision) **b** ☐ Dental **c** ☐ Vision **d** ☐ Life insurance
e ☐ Temporary disability (accident and sickness) **f** ☐ Long-term disability **g** ☐ Supplemental unemployment **h** ☐ Prescription drug
i ☐ Stop loss (large deductible) **j** ☐ HMO contract **k** ☐ PPO contract **l** ☐ Indemnity contract
m ☐ Other (specify) ▶

9 Experience-rated contracts:				
a Premiums: (1) Amount received	**9a(1)**			
(2) Increase (decrease) in amount due but unpaid	**9a(2)**			
(3) Increase (decrease) in unearned premium reserve	**9a(3)**			
(4) Earned (**(1)** + **(2)** - **(3)**)			**9a(4)**	
b Benefit charges (1) Claims paid	**9b(1)**			
(2) Increase (decrease) in claim reserves	**9b(2)**			
(3) Incurred claims (add **(1)** and **(2)**)			**9b(3)**	
(4) Claims charged			**9b(4)**	
c Remainder of premium: (1) Retention charges (on an accrual basis) --				
(A) Commissions	**9c(1)(A)**			
(B) Administrative service or other fees	**9c(1)(B)**			
(C) Other specific acquisition costs	**9c(1)(C)**			
(D) Other expenses	**9c(1)(D)**			
(E) Taxes	**9c(1)(E)**			
(F) Charges for risks or other contingencies	**9c(1)(F)**			
(G) Other retention charges	**9c(1)(G)**			
(H) Total retention			**9c(1)(H)**	
(2) Dividends or retroactive rate refunds. (These amounts were ☐ paid in cash, or ☐ credited.)			**9c(2)**	
d Status of policyholder reserves at end of year: (1) Amount held to provide benefits after retirement			**9d(1)**	
(2) Claim reserves			**9d(2)**	
(3) Other reserves			**9d(3)**	
e Dividends or retroactive rate refunds due. (Do not include amount entered in line **9c(2)**.)			**9e**	
10 Nonexperience-rated contracts:				
a Total premiums or subscription charges paid to carrier			**10a**	
b If the carrier, service, or other organization incurred any specific costs in connection with the acquisition or retention of the contract or policy, other than reported in Part I, line 2 above, report amount. Specify nature of costs.			**10b**	

Part IV Provision of Information

11 Did the insurance company fail to provide any information necessary to complete Schedule A? ☐ Yes ☒ No

12 If the answer to line 11 is "Yes," specify the information not provided. ▶

SCHEDULE C (Form 5500)	Service Provider Information	OMB No. 1210-0110
Department of the Treasury Internal Revenue Service Department of Labor Employee Benefits Security Administration Pension Benefit Guaranty Corporation	This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA). ▶ **File as an attachment to Form 5500.**	**2018** **This Form is Open to Public Inspection.**

For calendar plan year 2018 or fiscal plan year beginning 01/01/2018 and ending 12/31/2018

A Name of plan
APPLIED SYSTEMS, INC. RETIREMENT SAVINGS PLAN

B Three-digit plan number (PN) ▶ 001

C Plan sponsor's name as shown on line 2a of Form 5500
APPLIED SYSTEMS, INC.

D Employer Identification Number (EIN)
20-5511045

Part I Service Provider Information (see instructions)

You must complete this Part, in accordance with the instructions, to report the information required for **each person** who received, directly or indirectly, $5,000 or more in total compensation (i.e., money or anything else of monetary value) in connection with services rendered to the plan or the person's position with the plan during the plan year. If a person received **only** eligible indirect compensation for which the plan received the required disclosures, you are required to answer line 1 but are not required to include that person when completing the remainder of this Part.

1 Information on Persons Receiving Only Eligible Indirect Compensation

a Check "Yes" or "No" to indicate whether you are excluding a person from the remainder of this Part because they received only eligible indirect compensation for which the plan received the required disclosures (see instructions for definitions and conditions). . . . . ☐ Yes ☒ No

b If you answered line 1a "Yes," enter the name and EIN or address of each person providing the required disclosures for the service providers who received only eligible indirect compensation. Complete as many entries as needed (see instructions).

(b) Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation

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(b) Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation

2. Information on Other Service Providers Receiving Direct or Indirect Compensation. Except for those persons for whom you answered "Yes" to line 1a above, complete as many entries as needed to list each person receiving, directly or indirectly, $5,000 or more in total compensation (i.e., money or anything else of value) in connection with services rendered to the plan or their position with the plan during the plan year. (See instructions).

(a) Enter name and EIN or address (see instructions)

MASSACHUSETTS MUTUAL LIFE INS. CO.

04-1590850

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
52 60 63 64 68 72 49	CONTRACT ADMINISTRATOR	227971	Yes [X] No [ ]	Yes [X] No [ ]	0	Yes [X] No [ ]

(a) Enter name and EIN or address (see instructions)

GALLAGHER BENEFIT SERVICES, INC.

36-4291971

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
27	INVESTMENT ADVISOR	40000	Yes [ ] No [X]	Yes [ ] No [ ]		Yes [ ] No [ ]

(a) Enter name and EIN or address (see instructions)

LEGACY PROFESSIONALS LLP

32-0043599

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
10	AUDITOR	10000	Yes [ ] No [X]	Yes [ ] No [ ]		Yes [ ] No [ ]

2. Information on Other Service Providers Receiving Direct or Indirect Compensation. Except for those persons for whom you answered "Yes" to line 1a above, complete as many entries as needed to list each person receiving, directly or indirectly, $5,000 or more in total compensation (i.e., money or anything else of value) in connection with services rendered to the plan or their position with the plan during the plan year. (See instructions).

(a) Enter name and EIN or address (see instructions)

AMERICAN FUNDS

95-1411037

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
52	INVESTMENT PROVIDER	0	Yes [X] No [ ]	Yes [ ] No [X]	0	Yes [X] No [ ]

(a) Enter name and EIN or address (see instructions)

FIDELITY INVESTMENTS

04-2466841

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
52	INVESTMENT PROVIDER	0	Yes [X] No [ ]	Yes [ ] No [X]	0	Yes [X] No [ ]

(a) Enter name and EIN or address (see instructions)

FIDELITY INVESTMENTS

04-2993075

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
52	INVESTMENT PROVIDER	0	Yes [X] No [ ]	Yes [ ] No [X]	0	Yes [X] No [ ]

2. Information on Other Service Providers Receiving Direct or Indirect Compensation. Except for those persons for whom you answered "Yes" to line 1a above, complete as many entries as needed to list each person receiving, directly or indirectly, $5,000 or more in total compensation (i.e., money or anything else of value) in connection with services rendered to the plan or their position with the plan during the plan year. (See instructions).

(a) Enter name and EIN or address (see instructions)

FIDELITY INVESTMENTS

04-3365630

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
52	INVESTMENT PROVIDER	0	Yes [X] No [ ]	Yes [ ] No [X]	0	Yes [X] No [ ]

(a) Enter name and EIN or address (see instructions)

FRANKLIN TEMPLETON

13-3151768

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
52	INVESTMENT PROVIDER	0	Yes [X] No [ ]	Yes [ ] No [X]	0	Yes [X] No [ ]

(a) Enter name and EIN or address (see instructions)

JANUS HENDERSON

84-0592523

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
52	INVESTMENT PROVIDER	0	Yes [X] No [ ]	Yes [ ] No [X]	0	Yes [X] No [ ]

2. Information on Other Service Providers Receiving Direct or Indirect Compensation. Except for those persons for whom you answered "Yes" to line 1a above, complete as many entries as needed to list each person receiving, directly or indirectly, $5,000 or more in total compensation (i.e., money or anything else of value) in connection with services rendered to the plan or their position with the plan during the plan year. (See instructions).

(a) Enter name and EIN or address (see instructions)

JP MORGAN

13-3963293

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
52	INVESTMENT PROVIDER	0	Yes [X] No [ ]	Yes [ ] No [X]	0	Yes [X] No [ ]

(a) Enter name and EIN or address (see instructions)

NORTHERN FUNDS

36-3608252

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
52	INVESTMENT PROVIDER	0	Yes [X] No [ ]	Yes [ ] No [X]	0	Yes [X] No [ ]

(a) Enter name and EIN or address (see instructions)

OPPENHEIMER

22-3849391

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
52	INVESTMENT PROVIDER	0	Yes [X] No [ ]	Yes [ ] No [X]	0	Yes [X] No [ ]

2. Information on Other Service Providers Receiving Direct or Indirect Compensation. Except for those persons for whom you answered "Yes" to line 1a above, complete as many entries as needed to list each person receiving, directly or indirectly, $5,000 or more in total compensation (i.e., money or anything else of value) in connection with services rendered to the plan or their position with the plan during the plan year. (See instructions).

(a) Enter name and EIN or address (see instructions)

PIONEER

04-2652279

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
52	INVESTMENT PROVIDER	0	Yes [X] No [ ]	Yes [ ] No [X]	0	Yes [X] No [ ]

(a) Enter name and EIN or address (see instructions)

T. ROWE PRICE

52-1151266

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
52	INVESTMENT PROVIDER	0	Yes [X] No [ ]	Yes [ ] No [X]	0	Yes [X] No [ ]

(a) Enter name and EIN or address (see instructions)

VANGUARD

23-1945930

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
52	INVESTMENT PROVIDER	0	Yes [X] No [ ]	Yes [ ] No [X]	0	Yes [X] No [ ]

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	60	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
PIONEER BOND FUND 04-2652279	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	72 52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
PREM U.S. GOVT MONEY MRKT BARINGS 04-3212059	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	72 52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
PREMIER CORE BOND BARINGS 04-3277549	BASIS POINTS * PLAN ASSETS

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	72 52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
MM S&P 500 INDEX NORTHERN TRUST 04-3410047	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
SELECT MID CAP GR TRP FRONTIER 04-3512596	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	72	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
SELECT MID CAP GR TRPFRONTIER 04-3512596	BASIS POINTS * PLAN ASSETS

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
SELECT MID CAP GR FD TRP FRONTIER 04-3512596	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	72	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
SELECT MID CAP GR FD TRPFRONTIER 04-3512596	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	72 52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
PREMIER DISCIPLINED GRTH BARINGS 04-3539084	BASIS POINTS * PLAN ASSETS

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	52 72	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
PREMIER DISCIPLINED GTH FD BARINGS 04-3539084	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
SEL FUNDAMENTAL VAL BRWHNLY BSPT 04-3584138	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	72	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
SEL FUNDAMENTAL VAL BRWHNLYBSPT 04-3584138	BASIS POINTS * PLAN ASSETS

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	60	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
FRANKLIN SMALL CAP VALUE FUND 13-3151768	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	63 60	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
SMALL CAP VALUE FRANKLIN 13-3151768	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	63 60	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
MID CAP VALUE JP MORGAN 13-3963293	BASIS POINTS * PLAN ASSETS

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	60	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
OPPENHEIMER REAL ESTATE FUND 22-3849391	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	60	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
REAL ESTATE OFI 22-3849391	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	60	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
BOND INDEX NORTHERN 36-3608252	BASIS POINTS * PLAN ASSETS

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	60	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
INTL EQUITY INDEX NORTHERN 36-3608252	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	60	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
MID CAP INDEX NORTHERN 36-3608252	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	60	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
SMALL CAP INDEX NORTHERN 36-3608252	BASIS POINTS * PLAN ASSETS

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	63 72 52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
MM SEL T. ROWE PRICE RET 2005 82-3347422	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	63 72 52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
MM SEL T. ROWE PRICE RET 2010 82-3355639	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	63 72 52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
MM SEL T. ROWE PRICE RET 2015 82-3382389	BASIS POINTS * PLAN ASSETS

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	63 72 52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
MM SEL T. ROWE PRICE RET 2020 82-3396442	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	63 72 52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
MM SEL T. ROWE PRICE RET 2025 82-3417420	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	63 72 52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
MM SEL T. ROWE PRICE RET 2030 82-3430358	BASIS POINTS * PLAN ASSETS

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	63 72 52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
MM SEL T. ROWE PRICE RET 2035 82-3439837	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	63 72 52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
MM SEL T. ROWE PRICE RET 2040 82-3451779	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	63 72 52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
MM SEL T. ROWE PRICE RET 2045 82-3472295	BASIS POINTS * PLAN ASSETS

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	63 72 52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
MM SEL T. ROWE PRICE RET 2050 82-3481715	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	63 72 52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
MM SEL T. ROWE PRICE RET 2055 82-3502011	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	63 72 52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
MM SEL T. ROWE PRICE RET BAL 82-3533944	BASIS POINTS * PLAN ASSETS

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	60	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
JANUS HENDERSON TRITON FD 84-0592523	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	63 60	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
EUROPACIFIC GROWTH AMERICAN 95-1411037	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
AMERICAN FUNDS	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
AMER FUNDS EUROPACIFIC GROWTH FUND 95-1411037	BASIS POINTS * PLAN ASSETS

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
AMERICAN FUNDS	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
EUROPACIFIC GROWTH AMERICAN 95-1411037	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
FIDELITY INVESTMENTS	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
CLOSED FIDELITY MID CAP INDEX 04-2466841	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
FIDELITY INVESTMENTS	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
CLOSED FIDELITY SMALL CAP INDE 04-2466841	BASIS POINTS * PLAN ASSETS

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
FIDELITY INVESTMENTS	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
FIDELITY MID CAP INDEX FUND 04-2466841	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
FIDELITY INVESTMENTS	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
FIDELITY SMALL CAP INDEX FUND 04-2466841	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
FIDELITY INVESTMENTS	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
CLOSED FIDELITY U.S. BOND INDE 04-2993075	BASIS POINTS * PLAN ASSETS

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
FIDELITY INVESTMENTS	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
FIDELITY U.S. BOND INDEX FUND 04-2993075	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
FIDELITY INVESTMENTS	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
CLOSED FIDELITY 500 INDEX FUND 04-3365630	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
FIDELITY INVESTMENTS	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
CLOSED FIDELITY INTERNATIONAL 04-3365630	BASIS POINTS * PLAN ASSETS

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
FIDELITY INVESTMENTS	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
FIDELITY 500 INDEX FUND 04-3365630	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
FIDELITY INVESTMENTS	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
FIDELITY INTERNATIONAL INDEX FUND 04-3365630	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
FRANKLIN TEMPLETON	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
FRANKLIN SMALL CAP VALUE FUND 13-3151768	BASIS POINTS * PLAN ASSETS

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
FRANKLIN TEMPLETON	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
SMALL CAP VALUE FRANKLIN 13-3151768	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
JANUS HENDERSON	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
JANUS HENDERSON TRITON FD 84-0592523	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
JP MORGAN	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
JP MORGAN MID CAP VALUE FUND 13-3963293	BASIS POINTS * PLAN ASSETS

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
JP MORGAN	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
MID CAP VALUE JP MORGAN 13-3963293	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
MASSACHUSETTS MUTUAL LIFE INS. CO.	49	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
MILLENNIUM TRUST COMPANY, LLC 36-4400066	REFERRAL FEE

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
NORTHERN FUNDS	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
BOND INDEX NORTHERN 36-3608252	BASIS POINTS * PLAN ASSETS

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
NORTHERN FUNDS	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
INTL EQUITY INDEX NORTHERN 36-3608252	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
NORTHERN FUNDS	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
MID CAP INDEX NORTHERN 36-3608252	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
NORTHERN FUNDS	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
SMALL CAP INDEX NORTHERN 36-3608252	BASIS POINTS * PLAN ASSETS

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
OPPENHEIMER	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
OPPENHEIMER REAL ESTATE FUND 22-3849391	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
OPPENHEIMER	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
REAL ESTATE OFI 22-3849391	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
PIONEER	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
PIONEER BOND FUND 04-2652279	BASIS POINTS * PLAN ASSETS

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
T. ROWE PRICE	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
T. ROWE PRICE RETIREMENT 2005 FUND 52-1151266	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
T. ROWE PRICE	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
T. ROWE PRICE RETIREMENT 2010 FUND 52-1151266	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
T. ROWE PRICE	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
T. ROWE PRICE RETIREMENT 2015 FUND 52-1151266	BASIS POINTS * PLAN ASSETS

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
T. ROWE PRICE	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
T. ROWE PRICE RETIREMENT 2020 FUND 52-1151266	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
T. ROWE PRICE	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
T. ROWE PRICE RETIREMENT 2025 FUND 52-1151266	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
T. ROWE PRICE	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
T. ROWE PRICE RETIREMENT 2030 FUND 52-1151266	BASIS POINTS * PLAN ASSETS

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
T. ROWE PRICE	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
T. ROWE PRICE RETIREMENT 2035 FUND 52-1151266	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
T. ROWE PRICE	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
T. ROWE PRICE RETIREMENT 2040 FUND 52-1151266	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
T. ROWE PRICE	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
T. ROWE PRICE RETIREMENT 2045 FUND 52-1151266	BASIS POINTS * PLAN ASSETS

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
T. ROWE PRICE	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
T. ROWE PRICE RETIREMENT 2050 FUND 52-1151266	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
T. ROWE PRICE	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
T. ROWE PRICE RETIREMENT 2055 FUND 52-1151266	BASIS POINTS * PLAN ASSETS

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
T. ROWE PRICE	52	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
T. ROWE PRICE RETIREMENT 2060 FUND 52-1151266	BASIS POINTS * PLAN ASSETS

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
T. ROWE PRICE	52	0
(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.	
T. ROWE PRICE RETIREMENT BAL FUND 52-1151266	BASIS POINTS * PLAN ASSETS	

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
VANGUARD	52	0
(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.	
VANGUARD EQUITY-INCOME FUND 23-1945930	BASIS POINTS * PLAN ASSETS	

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.	

Part II Service Providers Who Fail or Refuse to Provide Information

4 Provide, to the extent possible, the following information for each service provider who failed or refused to provide the information necessary to complete this Schedule.

(a) Enter name and EIN or address of service provider (see instructions)	**(b)** Nature of Service Code(s)	**(c)** Describe the information that the service provider failed or refused to provide

(a) Enter name and EIN or address of service provider (see instructions)	**(b)** Nature of Service Code(s)	**(c)** Describe the information that the service provider failed or refused to provide

(a) Enter name and EIN or address of service provider (see instructions)	**(b)** Nature of Service Code(s)	**(c)** Describe the information that the service provider failed or refused to provide

(a) Enter name and EIN or address of service provider (see instructions)	**(b)** Nature of Service Code(s)	**(c)** Describe the information that the service provider failed or refused to provide

(a) Enter name and EIN or address of service provider (see instructions)	**(b)** Nature of Service Code(s)	**(c)** Describe the information that the service provider failed or refused to provide

(a) Enter name and EIN or address of service provider (see instructions)	**(b)** Nature of Service Code(s)	**(c)** Describe the information that the service provider failed or refused to provide

Part III Termination Information on Accountants and Enrolled Actuaries (see instructions)

(complete as many entries as needed)

a Name:	**b** EIN:
c Position:	
d Address:	**e** Telephone:

Explanation:

a Name:	**b** EIN:
c Position:	
d Address:	**e** Telephone:

Explanation:

a Name:	**b** EIN:
c Position:	
d Address:	**e** Telephone:

Explanation:

a Name:	**b** EIN:
c Position:	
d Address:	**e** Telephone:

Explanation:

a Name:	**b** EIN:
c Position:	
d Address:	**e** Telephone:

Explanation:

SCHEDULE D (Form 5500)

Department of the Treasury
Internal Revenue Service

Department of Labor
Employee Benefits Security Administration

DFE/Participating Plan Information

This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA).

▶ **File as an attachment to Form 5500.**

OMB No. 1210-0110

2018

This Form is Open to Public Inspection.

For calendar plan year 2018 or fiscal plan year beginning 01/01/2018 and ending 12/31/2018

A Name of plan
APPLIED SYSTEMS, INC. RETIREMENT SAVINGS PLAN

B Three-digit plan number (PN) ▶ 001

C Plan or DFE sponsor's name as shown on line 2a of Form 5500
APPLIED SYSTEMS, INC.

D Employer Identification Number (EIN)
20-5511045

Part I **Information on interests in MTIAs, CCTs, PSAs, and 103-12 IEs (to be completed by plans and DFEs)**
(Complete as many entries as needed to report all interests in DFEs)

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-BT MM SEL T. ROWE PRICE RET BAL

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0342299-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-CB REAL ESTATE

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
04-1590850-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-CO T. ROWE PRICE RET 2005

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0342299-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-DO T. ROWE PRICE RET 2015

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0342299-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-EO T. ROWE PRICE RET 2025

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0342299-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-FO T. ROWE PRICE RET 2035

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0342299-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-FT T. ROWE PRICE RET 2010

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0342299-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-GO T. ROWE PRICE RET 2045

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE

c EIN-PN 90-0342299-000	**d** Entity code P	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) 0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-HO T. ROWE PRICE RET 2055

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE

c EIN-PN 90-0342299-000	**d** Entity code P	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) 0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-LE PREMIER CORE BOND

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE

c EIN-PN 04-1590850-000	**d** Entity code P	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) 0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-LG PREM U.S. GOVT MONEY MRKT

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE

c EIN-PN 04-1590850-000	**d** Entity code P	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) 29688

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-LK SEL FUNDAMENTAL VAL

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE

c EIN-PN 04-1590850-000	**d** Entity code P	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) 0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-LT T. ROWE PRICE RET 2020

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE

c EIN-PN 90-0342299-000	**d** Entity code P	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) 0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-NU PREMIER DISCIPLINED GRTH

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE

c EIN-PN 04-1590850-000	**d** Entity code P	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) 0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-OT T. ROWE PRICE RET 2050

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE

c EIN-PN 90-0342299-000	**d** Entity code P	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) 0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-PT T. ROWE PRICE RET 2030

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE

c EIN-PN 90-0342299-000	**d** Entity code P	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) 0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-QA INTL EQUITY INDEX

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE

c EIN-PN 90-0342299-000	**d** Entity code P	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) 0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-QI MID CAP INDEX

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE

c EIN-PN 90-0342299-000	**d** Entity code P	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) 0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-QJ MID CAP VALUE

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE

c EIN-PN 90-0342299-000	**d** Entity code P	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) 0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-QT T. ROWE PRICE RET 2040

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE

c EIN-PN 90-0342299-000	**d** Entity code P	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) 0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-QV SMALL CAP INDEX

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE

c EIN-PN 90-0342299-000	**d** Entity code P	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) 0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-QW BOND INDEX

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE

c EIN-PN 90-0342299-000	**d** Entity code P	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) 0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-SF SMALL CAP VALUE

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE

c EIN-PN 90-0342299-000	**d** Entity code P	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) 0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-VB EUROPACIFIC GROWTH

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE

c EIN-PN 04-1590850-000	**d** Entity code P	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) 0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-WF SELECT MID CAP GR

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE

c EIN-PN 04-1590850-000	**d** Entity code P	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) 0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-ZX MM S&P 500 INDEX

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE

c EIN-PN 04-1590850-000	**d** Entity code P	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) 0

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)

Part II Information on Participating Plans (to be completed by DFEs)

(Complete as many entries as needed to report all participating plans)

a Plan name	
b Name of plan sponsor	**c** EIN-PN

a Plan name	
b Name of plan sponsor	**c** EIN-PN

a Plan name	
b Name of plan sponsor	**c** EIN-PN

a Plan name	
b Name of plan sponsor	**c** EIN-PN

a Plan name	
b Name of plan sponsor	**c** EIN-PN

a Plan name	
b Name of plan sponsor	**c** EIN-PN

a Plan name	
b Name of plan sponsor	**c** EIN-PN

a Plan name	
b Name of plan sponsor	**c** EIN-PN

a Plan name	
b Name of plan sponsor	**c** EIN-PN

a Plan name	
b Name of plan sponsor	**c** EIN-PN

a Plan name	
b Name of plan sponsor	**c** EIN-PN

a Plan name	
b Name of plan sponsor	**c** EIN-PN

SCHEDULE H (Form 5500)

Department of the Treasury
Internal Revenue Service

Department of Labor
Employee Benefits Security Administration

Pension Benefit Guaranty Corporation

Financial Information

This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA), and section 6058(a) of the Internal Revenue Code (the Code).

▶ **File as an attachment to Form 5500.**

OMB No. 1210-0110

2018

This Form is Open to Public Inspection

For calendar plan year 2018 or fiscal plan year beginning 01/01/2018 and ending 12/31/2018

A Name of plan
APPLIED SYSTEMS, INC. RETIREMENT SAVINGS PLAN

B Three-digit plan number (PN) ▶ 001

C Plan sponsor's name as shown on line 2a of Form 5500
APPLIED SYSTEMS, INC.

D Employer Identification Number (EIN)
20-5511045

Part I Asset and Liability Statement

1 Current value of plan assets and liabilities at the beginning and end of the plan year. Combine the value of plan assets held in more than one trust. Report the value of the plan's interest in a commingled fund containing the assets of more than one plan on a line-by-line basis unless the value is reportable on lines 1c(9) through 1c(14). Do not enter the value of that portion of an insurance contract which guarantees, during this plan year, to pay a specific dollar benefit at a future date. **Round off amounts to the nearest dollar.** MTIAs, CCTs, PSAs, and 103-12 IEs do not complete lines 1b(1), 1b(2), 1c(8), 1g, 1h, and 1i. CCTs, PSAs, and 103-12 IEs also do not complete lines 1d and 1e. See instructions.

Assets		(a) Beginning of Year	(b) End of Year
a Total noninterest-bearing cash	1a		
b Receivables (less allowance for doubtful accounts):			
(1) Employer contributions	1b(1)		
(2) Participant contributions	1b(2)		
(3) Other	1b(3)		
c General investments:			
(1) Interest-bearing cash (include money market accounts & certificates of deposit)	1c(1)		
(2) U.S. Government securities	1c(2)		
(3) Corporate debt instruments (other than employer securities):			
(A) Preferred	1c(3)(A)		
(B) All other	1c(3)(B)		
(4) Corporate stocks (other than employer securities):			
(A) Preferred	1c(4)(A)		
(B) Common	1c(4)(B)		
(5) Partnership/joint venture interests	1c(5)		
(6) Real estate (other than employer real property)	1c(6)		
(7) Loans (other than to participants)	1c(7)		
(8) Participant loans	1c(8)	1182424	1210614
(9) Value of interest in common/collective trusts	1c(9)	0	0
(10) Value of interest in pooled separate accounts	1c(10)	0	0
(11) Value of interest in master trust investment accounts	1c(11)		
(12) Value of interest in 103-12 investment entities	1c(12)		
(13) Value of interest in registered investment companies (e.g., mutual funds)	1c(13)	78966593	76215427
(14) Value of funds held in insurance company general account (unallocated contracts)	1c(14)	8812060	11744242
(15) Other	1c(15)	0	0

			(a) Beginning of Year	(b) End of Year
1d	Employer-related investments:			
	(1) Employer securities	1d(1)	0	0
	(2) Employer real property	1d(2)		
e	Buildings and other property used in plan operation	1e		
f	Total assets (add all amounts in lines 1a through 1e)	1f	88961077	89170283
	Liabilities			
g	Benefit claims payable	1g		
h	Operating payables	1h		
i	Acquisition indebtedness	1i		
j	Other liabilities	1j		
k	Total liabilities (add all amounts in lines 1g through1j)	1k	0	0
	Net Assets			
l	Net assets (subtract line 1k from line 1f)	1l	88961077	89170283

Part II Income and Expense Statement

2 Plan income, expenses, and changes in net assets for the year. Include all income and expenses of the plan, including any trust(s) or separately maintained fund(s) and any payments/receipts to/from insurance carriers. Round off amounts to the nearest dollar. MTIAs, CCTs, PSAs, and 103-12 IEs do not complete lines 2a, 2b(1)(E), 2e, 2f, and 2g.

	Income		(a) Amount	(b) Total
a	**Contributions:**			
	(1) Received or receivable in cash from: **(A)** Employers	2a(1)(A)	1315859	
	(B) Participants	2a(1)(B)	6921953	
	(C) Others (including rollovers)	2a(1)(C)	1204137	
	(2) Noncash contributions	2a(2)		
	(3) Total contributions. Add lines **2a(1)(A), (B), (C),** and line **2a(2)**	2a(3)		9441949
b	**Earnings on investments:**			
	(1) Interest:			
	(A) Interest-bearing cash (including money market accounts and certificates of deposit)	2b(1)(A)		
	(B) U.S. Government securities	2b(1)(B)		
	(C) Corporate debt instruments	2b(1)(C)		
	(D) Loans (other than to participants)	2b(1)(D)		
	(E) Participant loans	2b(1)(E)	71827	
	(F) Other	2b(1)(F)	342212	
	(G) Total interest. Add lines **2b(1)(A)** through **(F)**	2b(1)(G)		414039
	(2) Dividends: **(A)** Preferred stock	2b(2)(A)		
	(B) Common stock	2b(2)(B)	0	
	(C) Registered investment company shares (e.g. mutual funds)	2b(2)(C)	5345861	
	(D) Total dividends. Add lines **2b(2)(A)**, **(B)**, and **(C)**	2b(2)(D)		5345861
	(3) Rents	2b(3)		
	(4) Net gain (loss) on sale of assets: **(A)** Aggregate proceeds	2b(4)(A)		
	(B) Aggregate carrying amount (see instructions)	2b(4)(B)		
	(C) Subtract line **2b(4)(B)** from line **2b(4)(A)** and enter result	2b(4)(C)		0
	(5) Unrealized appreciation (depreciation) of assets: **(A)** Real estate	2b(5)(A)		
	(B) Other	2b(5)(B)		
	(C) Total unrealized appreciation of assets. Add lines **2b(5)(A)** and **(B)**	2b(5)(C)		0

		(a) Amount	(b) Total
(6) Net investment gain (loss) from common/collective trusts	2b(6)		0
(7) Net investment gain (loss) from pooled separate accounts	2b(7)		572364
(8) Net investment gain (loss) from master trust investment accounts	2b(8)		
(9) Net investment gain (loss) from 103-12 investment entities	2b(9)		
(10) Net investment gain (loss) from registered investment companies (e.g., mutual funds)	2b(10)		-11207920
c Other income	2c		0
d Total income. Add all **income** amounts in column (b) and enter total	2d		4566293
Expenses			
e Benefit payment and payments to provide benefits:			
(1) Directly to participants or beneficiaries, including direct rollovers	2e(1)	4079116	
(2) To insurance carriers for the provision of benefits	2e(2)	0	
(3) Other	2e(3)	0	
(4) Total benefit payments. Add lines **2e(1)** through **(3)**	2e(4)		4079116
f Corrective distributions (see instructions)	2f		0
g Certain deemed distributions of participant loans (see instructions)	2g		0
h Interest expense	2h		
i Administrative expenses: **(1)** Professional fees	2i(1)	10000	
(2) Contract administrator fees	2i(2)	224950	
(3) Investment advisory and management fees	2i(3)	40000	
(4) Other	2i(4)	3021	
(5) Total administrative expenses. Add lines **2i(1)** through **(4)**	2i(5)		277971
j Total expenses. Add all **expense** amounts in column (b) and enter total	2j		4357087
Net Income and Reconciliation			
k Net income (loss). Subtract line **2j** from line **2d**	2k		209206
l Transfers of assets:			
(1) To this plan	2l(1)		
(2) From this plan	2l(2)		

Part III Accountant's Opinion

3 Complete lines 3a through 3c if the opinion of an independent qualified public accountant is attached to this Form 5500. Complete line 3d if an opinion is not attached.

a The attached opinion of an independent qualified public accountant for this plan is (see instructions):

(1) [ ] Unqualified **(2)** [ ] Qualified **(3)** [X] Disclaimer **(4)** [ ] Adverse

b Did the accountant perform a limited scope audit pursuant to 29 CFR 2520.103-8 and/or 103-12(d)? [X] Yes [ ] No

c Enter the name and EIN of the accountant (or accounting firm) below:

(1) Name: LEGACY PROFESSIONAL LLP **(2)** EIN: 32-0043599

d The opinion of an independent qualified public accountant is **not attached** because:

(1) [ ] This form is filed for a CCT, PSA, or MTIA. **(2)** [ ] It will be attached to the next Form 5500 pursuant to 29 CFR 2520.104-50.

Part IV Compliance Questions

4 CCTs and PSAs do not complete Part IV. MTIAs, 103-12 IEs, and GIAs do not complete lines 4a, 4e, 4f, 4g, 4h, 4k, 4m, 4n, or 5. 103-12 IEs also do not complete lines 4j and 4l. MTIAs also do not complete line 4l.

During the plan year:

		Yes	No	Amount
a Was there a failure to transmit to the plan any participant contributions within the time period described in 29 CFR 2510.3-102? Continue to answer "Yes" for any prior year failures until fully corrected. (See instructions and DOL's Voluntary Fiduciary Correction Program.)	4a		X	
b Were any loans by the plan or fixed income obligations due the plan in default as of the close of the plan year or classified during the year as uncollectible? Disregard participant loans secured by participant's account balance. (Attach Schedule G (Form 5500) Part I if "Yes" is checked.)	4b		X	

			Yes	No	Amount
c	Were any leases to which the plan was a party in default or classified during the year as uncollectible? (Attach Schedule G (Form 5500) Part II if "Yes" is checked.)	4c		X	
d	Were there any nonexempt transactions with any party-in-interest? (Do not include transactions reported on line 4a. Attach Schedule G (Form 5500) Part III if "Yes" is checked.)	4d		X	
e	Was this plan covered by a fidelity bond?	4e	X		1000000
f	Did the plan have a loss, whether or not reimbursed by the plan's fidelity bond, that was caused by fraud or dishonesty?	4f		X	
g	Did the plan hold any assets whose current value was neither readily determinable on an established market nor set by an independent third party appraiser?	4g		X	
h	Did the plan receive any noncash contributions whose value was neither readily determinable on an established market nor set by an independent third party appraiser?	4h		X	
i	Did the plan have assets held for investment? (Attach schedule(s) of assets if "Yes" is checked, and see instructions for format requirements.)	4i	X		
j	Were any plan transactions or series of transactions in excess of 5% of the current value of plan assets? (Attach schedule of transactions if "Yes" is checked, and see instructions for format requirements.)	4j	X		
k	Were all the plan assets either distributed to participants or beneficiaries, transferred to another plan, or brought under the control of the PBGC?	4k		X	
l	Has the plan failed to provide any benefit when due under the plan?	4l		X	
m	If this is an individual account plan, was there a blackout period? (See instructions and 29 CFR 2520.101-3.)	4m		X	
n	If 4m was answered "Yes," check the "Yes" box if you either provided the required notice or one of the exceptions to providing the notice applied under 29 CFR 2520.101-3.	4n			

5a Has a resolution to terminate the plan been adopted during the plan year or any prior plan year? ☐ Yes ☒ No
If "Yes," enter the amount of any plan assets that reverted to the employer this year _____.

5b If, during this plan year, any assets or liabilities were transferred from this plan to another plan(s), identify the plan(s) to which assets or liabilities were transferred. (See instructions.)

5b(1) Name of plan(s)	**5b(2)** EIN(s)	**5b(3)** PN(s)

5c If the plan is a defined benefit plan, is it covered under the PBGC insurance program (See ERISA section 4021.)? ..... ☐ Yes ☐ No ☐ Not determined
If "Yes" is checked, enter the My PAA confirmation number from the PBGC premium filing for this plan year_____. (See instructions.)

SCHEDULE R (Form 5500)

Department of the Treasury
Internal Revenue Service

Department of Labor
Employee Benefits Security Administration

Pension Benefit Guaranty Corporation

Retirement Plan Information

This schedule is required to be filed under sections 104 and 4065 of the Employee Retirement Income Security Act of 1974 (ERISA) and section 6058(a) of the Internal Revenue Code (the Code).

▶ **File as an attachment to Form 5500.**

OMB No. 1210-0110

2018

This Form is Open to Public Inspection.

For calendar plan year 2018 or fiscal plan year beginning 01/01/2018 and ending 12/31/2018

A Name of plan
APPLIED SYSTEMS, INC. RETIREMENT SAVINGS PLAN

B Three-digit plan number (PN) ▶ 001

C Plan sponsor's name as shown on line 2a of Form 5500
APPLIED SYSTEMS, INC.

D Employer Identification Number (EIN)
20-5511045

Part I Distributions

All references to distributions relate only to payments of benefits during the plan year.

1 Total value of distributions paid in property other than in cash or the forms of property specified in the instructions **1** 0

2 Enter the EIN(s) of payor(s) who paid benefits on behalf of the plan to participants or beneficiaries during the year (if more than two, enter EINs of the two payors who paid the greatest dollar amounts of benefits):

EIN(s): 04-1590850

Profit-sharing plans, ESOPs, and stock bonus plans, skip line 3.

3 Number of participants (living or deceased) whose benefits were distributed in a single sum, during the plan year **3**

Part II Funding Information (If the plan is not subject to the minimum funding requirements of section 412 of the Internal Revenue Code or ERISA section 302, skip this Part.)

4 Is the plan administrator making an election under Code section 412(d)(2) or ERISA section 302(d)(2)? ..... ☐ **Yes** ☐ **No** ☐ **N/A**

If the plan is a defined benefit plan, go to line 8.

5 If a waiver of the minimum funding standard for a prior year is being amortized in this plan year, see instructions and enter the date of the ruling letter granting the waiver. **Date:** Month _____ Day _____ Year _____

If you completed line 5, complete lines 3, 9, and 10 of Schedule MB and do not complete the remainder of this schedule.

6 **a** Enter the minimum required contribution for this plan year (include any prior year accumulated funding deficiency not waived) **6a**

b Enter the amount contributed by the employer to the plan for this plan year **6b**

c Subtract the amount in line 6b from the amount in line 6a. Enter the result (enter a minus sign to the left of a negative amount) **6c**

If you completed line 6c, skip lines 8 and 9.

7 Will the minimum funding amount reported on line 6c be met by the funding deadline? ..... ☐ **Yes** ☐ **No** ☐ **N/A**

8 If a change in actuarial cost method was made for this plan year pursuant to a revenue procedure or other authority providing automatic approval for the change or a class ruling letter, does the plan sponsor or plan administrator agree with the change? ..... ☐ **Yes** ☐ **No** ☐ **N/A**

Part III Amendments

9 If this is a defined benefit pension plan, were any amendments adopted during this plan year that increased or decreased the value of benefits? If yes, check the appropriate box. If no, check the "No" box. ..... ☐ **Increase** ☐ **Decrease** ☐ **Both** ☐ **No**

Part IV ESOPs (see instructions). If this is not a plan described under section 409(a) or 4975(e)(7) of the Internal Revenue Code, skip this Part.

10 Were unallocated employer securities or proceeds from the sale of unallocated securities used to repay any exempt loan? ..... ☐ **Yes** ☐ **No**

11 **a** Does the ESOP hold any preferred stock? ..... ☐ **Yes** ☐ **No**

b If the ESOP has an outstanding exempt loan with the employer as lender, is such loan part of a "back-to-back" loan? (See instructions for definition of "back-to-back" loan.) ..... ☐ **Yes** ☐ **No**

12 Does the ESOP hold any stock that is not readily tradable on an established securities market? ..... ☐ **Yes** ☐ **No**

Part V Additional Information for Multiemployer Defined Benefit Pension Plans

13 Enter the following information for each employer that contributed more than 5% of total contributions to the plan during the plan year (measured in dollars). See instructions. *Complete as many entries as needed to report all applicable employers.*

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month _____ Day _____ Year _____

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) _____
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify):

---

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month _____ Day _____ Year _____

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) _____
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): _____

---

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month _____ Day _____ Year _____

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) _____
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): _____

---

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month _____ Day _____ Year _____

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) _____
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): _____

---

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month _____ Day _____ Year _____

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) _____
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): _____

---

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month _____ Day _____ Year _____

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) _____
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): _____

14 Enter the number of participants on whose behalf no contributions were made by an employer as an employer of the participant for:

a The current year	**14a**	
b The plan year immediately preceding the current plan year	**14b**	
c The second preceding plan year	**14c**	

15 Enter the ratio of the number of participants under the plan on whose behalf no employer had an obligation to make an employer contribution during the current plan year to:

a The corresponding number for the plan year immediately preceding the current plan year	**15a**	
b The corresponding number for the second preceding plan year	**15b**	

16 Information with respect to any employers who withdrew from the plan during the preceding plan year:

a Enter the number of employers who withdrew during the preceding plan year	**16a**	
b If line 16a is greater than 0, enter the aggregate amount of withdrawal liability assessed or estimated to be assessed against such withdrawn employers	**16b**	

17 If assets and liabilities from another plan have been transferred to or merged with this plan during the plan year, check box and see instructions regarding supplemental information to be included as an attachment. ☐

Part VI Additional Information for Single-Employer and Multiemployer Defined Benefit Pension Plans

18 If any liabilities to participants or their beneficiaries under the plan as of the end of the plan year consist (in whole or in part) of liabilities to such participants and beneficiaries under two or more pension plans as of immediately before such plan year, check box and see instructions regarding supplemental information to be included as an attachment ☐

19 If the total number of participants is 1,000 or more, complete lines (a) through (c)

a Enter the percentage of plan assets held as:
Stock: _____% Investment-Grade Debt: _____% High-Yield Debt: _____% Real Estate: _____% Other: _____%

b Provide the average duration of the combined investment-grade and high-yield debt:
☐ 0-3 years ☐ 3-6 years ☐ 6-9 years ☐ 9-12 years ☐ 12-15 years ☐ 15-18 years ☐ 18-21 years ☐ 21 years or more

c What duration measure was used to calculate line 19(b)?
☐ Effective duration ☐ Macaulay duration ☐ Modified duration ☐ Other (specify):

APPLIED SYSTEMS, INC. RETIREMENT SAVINGS PLAN

FINANCIAL STATEMENTS

DECEMBER 31, 2018

APPLIED SYSTEMS, INC. RETIREMENT SAVINGS PLAN

FINANCIAL STATEMENTS WITH SUPPLEMENTAL SCHEDULES

DECEMBER 31, 2018 AND 2017

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CERTIFIED PUBLIC ACCOUNTANTS

REPORT OF INDEPENDENT AUDITORS

To the Participants and Administrative Committee of
Applied Systems, Inc. Retirement Savings Plan

Report on the Financial Statements
We were engaged to audit the accompanying financial statements of Applied Systems, Inc. Retirement Savings Plan (the Plan), which comprise the statements of net assets available for benefits as of December 31, 2018 and 2017, and the related statements of changes in net assets available for benefits for the years then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements
Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility
Our responsibility is to express an opinion on these financial statements based on conducting the audits in accordance with auditing standards generally accepted in the United States of America. Because of the matter described in the *Basis for Disclaimer of Opinion* paragraph, however, we were not able to obtain sufficient appropriate audit evidence to provide a basis for an audit opinion.

Basis for Disclaimer of Opinion
As permitted by 29 CFR 2520.103-8 of the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974, the Plan Administrator instructed us not to perform, and we did not perform, any auditing procedures with respect to the information summarized in Note 4, which was certified by Reliance Trust, the Trustee of the Plan, except for comparing such information with the related information included in the financial statements. We have been informed by the Plan Administrator that the Trustee holds the Plan's investment assets and executes investment transactions. The Plan Administrator has obtained certifications from the Trustee as of December 31, 2018 and 2017 and for the years then ended, that the information provided to the Plan Administrator by the Trustee is complete and accurate.

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Disclaimer of Opinion
Because of the significance of the matter described in the *Basis for Disclaimer of Opinion* paragraph, we have not been able to obtain sufficient appropriate audit evidence to provide a basis for an audit opinion. Accordingly, we do not express an opinion on these financial statements.

Report on Supplemental Schedules
The supplemental schedules are required by the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974 and are presented for the purpose of additional analysis and are not a required part of the financial statements. Because of the significance of the matter described in the *Basis for Disclaimer of Opinion* paragraph, we do not express an opinion on these supplemental schedules.

Report on Form and Content in Compliance With DOL Rules and Regulations
The form and content of the information included in the financial statements and supplemental schedules, other than that derived from the information certified by the Trustee, have been audited by us in accordance with auditing standards generally accepted in the United States of America and, in our opinion, are presented in compliance with the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974.

Legacy Professionals LLP

Schererville, Indiana

September 17, 2019

Applied Systems, Inc. Retirement Savings Plan

Statements of Net Assets Available for Benefits

December 31, 2018 and 2017

	2018	2017
Assets		
Investments - at fair value		
Mutual funds	$ 76,215,427	$ -
Pooled separate accounts	-	78,966,593
Investments - at contract value		
Guaranteed investment contract	11,744,242	8,812,060
Total investments	87,959,669	87,778,653
Receivables		
Employer contributions	1,479,173	1,308,110
Notes receivable from participants	1,210,614	1,182,424
Accrued dividends	19,622	-
Total receivables	2,709,409	2,490,534
Total assets	90,669,078	90,269,187
Liabilities and Net Assets		
Liabilities		
Accounts payable and accrued expenses	19,746	-
Net assets available for benefits	$ 90,649,332	$ 90,269,187

See accompanying notes to financial statements.

APPLIED SYSTEMS, INC. RETIREMENT SAVINGS PLAN

STATEMENTS OF CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS

YEARS ENDED DECEMBER 31, 2018 AND 2017

	2018	2017
ADDITIONS		
Investment income		
Net appreciation (depreciation) in fair value of investments	$ (10,635,556)	$ 12,431,354
Dividends	5,365,483	470,116
Interest on guaranteed investment contract	342,212	261,785
Net investment income (loss)	(4,927,861)	13,163,255
Contributions		
Participants	6,922,622	6,031,264
Employer	1,486,252	1,308,880
Rollover	1,204,138	783,345
Total contributions	9,613,012	8,123,489
Interest on notes receivable from participants	71,827	58,923
Total additions	4,756,978	21,345,667
DEDUCTIONS		
Benefits paid to participants	4,079,116	1,938,870
Corrective distributions	-	161
Administrative expenses	297,717	58,971
Total deductions	4,376,833	1,998,002
NET INCREASE	380,145	19,347,665
NET ASSETS AVAILABLE FOR BENEFITS		
Beginning of year	90,269,187	70,921,522
End of year	$ 90,649,332	$ 90,269,187

See accompanying notes to financial statements.

NOTE 1. DESCRIPTION OF THE PLAN

The following description provides only general information on the provisions of Applied Systems, Inc. Retirement Savings Plan (the Plan). Participants should refer to the summary plan description for a more complete description of the Plan's provisions.

General - The Plan is a defined contribution retirement plan which covers substantially all full-time and part-time employees of Applied Systems, Inc. and SEMCAT Corp. (collectively, the Company) under the provisions of Section 401(a) of the Internal Revenue Code (IRC), which includes a qualified cash or deferred arrangement as described in Section 401(k) of the IRC, for the benefit of eligible employees of the Company. The Plan is subject to the provisions of the Employee Retirement Income Security Act of 1974 (ERISA), as amended. Benefits under the Plan are not insured by the Pension Benefit Guaranty Corporation.

Eligibility and Participation - Employees who are not otherwise excluded from the Plan, are eligible to participate in the Plan on the date of hire. New employees who participate in the Plan and do not make alternative elections are automatically enrolled at a 5% contribution rate, and contributions are invested in a default investment account until changed by the participant.

Contributions - Participants may elect to contribute up to a maximum of 100% of their pre-tax compensation as defined by the Plan, subject to certain IRC limitations. Salary deferrals may be designated as (after-tax) Roth deferrals by participants. The Company makes matching contributions to participants who meet allocation conditions of the Plan, in an amount equal to 25% of the first 12% of elective deferrals that each participant contributes to the Plan. Participants may also roll over amounts representing distributions from other qualified retirement plans.

The Plan allows the Company to make additional discretionary profit sharing contributions to the Plan. Such contributions, if any, are determined as a uniform percentage of compensation for all eligible participants. There were no discretionary contributions for the years ended December 31, 2018 and 2017.

Participant Accounts - Individual accounts are maintained for each participant to reflect the participant's contributions and Company matching contributions, as well as allocations of investment earnings and administrative expenses paid by the Plan. Allocations are based on participant earnings, account balances or specific participant transactions, as defined. The benefit to which a participant is entitled is the benefit that can be provided from the participant's vested account.

NOTE 1. DESCRIPTION OF THE PLAN (CONTINUED)

Investments - Participants may direct contributions into various investment options offered by the Plan. The Plan currently offers twenty-seven mutual funds and one benefit-responsive contract as investment options for participants. Poor investment performance by the investments selected by the participants may cause their vested balances to be lower than the amounts contributed to the Plan on their behalf.

Vesting - Participants are fully vested in their pre-tax contributions. Employer matching contributions for individuals hired after January 1, 2016 are vested when the participant has completed three years of vesting service. In the event that an eligible participant passes away or becomes disabled while still employed, a participant will become 100% vested.

For participants hired before January 1, 2016 who worked at least one hour in calendar year 2016, employer matching contributions were vested in accordance with the following schedule:

Years of Service	Percentage
1	20%
2	40%
3	100%

For participants hired and terminated prior to January 1, 2016, employer matching contributions were vested in accordance with the following schedule:

Years of Service	Percentage
1	20%
2	40%
3	60%
4	80%
5	100%

Benefits - Upon termination of service due to death, disability or retirement after age 59½, a participant may elect to receive either a lump-sum amount equal to the value of the participant's vested interest in the account, or annual periodic installments if the participant's account balance exceeds $5,000 over a period selected by the participant not to exceed the participant's life expectancy.

Participants in service may make hardship withdrawals from their vested contributions upon demonstrating immediate and heavy financial need, as allowed under federal rules.

NOTE 1. DESCRIPTION OF THE PLAN (CONTINUED)

Notes Receivable from Participants - Participants may borrow from their accounts a minimum of $1,000 up to a maximum of the lesser of $50,000 or 50% of their vested account balance. A participant may have only one outstanding note at any time. Notes are repayable through payroll deductions over periods ranging up to 60 months, unless used to purchase a primary residence. The interest rate is determined by the Plan Administrator based on prevailing market conditions and is fixed over the life of the note. The interest rate on outstanding participant notes as of December 31, 2018 and 2017 ranged from 5.25% to 7.50%. The Plan treats participant notes that are in default due to a missed payment, and outstanding note balances when a terminated participant takes a distribution, as deemed distributions.

Forfeitures - Included in net assets available for benefits are forfeited nonvested accounts of $42,757 and $40,562 as of December 31, 2018 and 2017, respectively. For the years ended December 31, 2018 and 2017, forfeitures reduced employer contributions and expenses by $27,294 and $46,664 respectively.

NOTE 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Method of Accounting - The financial statements have been prepared on the accrual basis of accounting in accordance with accounting principles generally accepted in the United States of America.

Investments - The investments of the Plan are reported at fair value, except for the fully benefit-responsive investment contract, which is reported at contract value. Contract value is the relevant measure for that portion of the net assets available for benefits of a defined contribution plan attributable to fully benefit-responsive investment contracts because contract value is the amount participants normally would receive if they were to initiate permitted transactions under the terms of the plan. For all other investments, the fair value of a financial instrument is the amount that would be received to sell that asset (or paid to transfer a liability) in an orderly transaction between market participants at the measurement date (the exit price). Net appreciation or depreciation includes the Plan's gains and losses on investments bought and sold as well as held during the year.

Notes Receivable from Participants - Notes receivable from participants are measured at their unpaid principal balance plus any accrued but unpaid interest. Delinquent notes receivable from participants are recorded as a distribution based upon the terms of the Plan document.

Payment of Benefits - Benefit payments to participants are recorded upon distribution. There were no participants who elected to withdraw from the Plan but were not yet paid at either December 31, 2018 or 2017.

Expenses - Participants of the plan are charged an annual fee of $170 for maintaining the Plan. Fees related to the administration of notes receivable from participants are charged directly to the participant's account and are included in administrative expenses. Certain investment related expenses are netted against net appreciation (depreciation) of fair value of investments.

NOTE 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Corrective Distributions - Amounts paid to the sponsor for contributions in excess of amounts allowed by the Internal Revenue Service are recorded as an expense.

Reclassifications - Certain prior year amounts have been reclassified to conform to the current year presentation.

Estimates - The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect certain reported amounts and disclosures in the financial statements. Actual results could differ from those estimates.

Subsequent Events - Subsequent events have been evaluated through September 17, 2019, which is the date the financial statements were available to be issued.

NOTE 3. FAIR VALUE MEASUREMENTS

The *Fair Value Measurements and Disclosures* Topic of the FASB Accounting Standards Codification established a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements). The following provides a description of the three levels of the fair value hierarchy.

Basis of Fair Value Measurement

Level 1	Unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities
Level 2	Quoted prices in markets that are not considered to be active or financial instruments for which all significant inputs are observable, either directly or indirectly
Level 3	Prices or valuations that require inputs that are both significant to the fair value measurement and unobservable

The Plan's investments in mutual funds are classified within Level 1 of the fair value measurements hierarchy. The fair values of mutual funds are determined by reference to the funds' underlying assets, which are principally marketable equity and fixed income securities. Shares held in mutual funds are traded on national securities exchanges and are valued at the net asset value on the last business day of each period presented.

The Plan's investments in pooled separate accounts are classified within Level 2 of the fair value measurements hierarchy. The fair values of the pooled separate accounts have been estimated using the net asset value per share of the investments by reference to the underlying assets, which consist primarily of marketable equity and fixed income securities. Redemptions are available on a daily basis without notice.

NOTE 4. INFORMATION CERTIFIED BY THE TRUSTEE (UNAUDITED)

The Plan Administrator has obtained certifications from Reliance Trust that the following information regarding the Plan's investments as of and for the years ended December 31, 2018 and 2017 is complete and accurate:

	2018	2017
Investments:		
Guaranteed investment contract - at contract value	$ 11,744,242	$ 8,812,060
Pooled separate accounts - at fair value	$ -	$ 78,966,593
Mutual funds - at fair value	$ 76,215,427	$ -
Receivables:		
Notes receivables from participants	$ 1,210,614	$ 1,182,424
Investment income:		
Net appreciation (depreciation) in fair value of investments	$ (10,635,556)	$ 12,431,354
Dividends	$ 5,365,483	$ 470,116
Interest on guaranteed investment contract	$ 342,212	$ 261,785
Interest on notes receivable from participants	$ 71,827	$ 58,923

NOTE 5. INVESTMENT CONTRACT WITH INSURANCE COMPANY

The Plan has a benefit-responsive group annuity contract with Massachusetts Mutual Life Insurance Company (MassMutual). MassMutual maintains the contributions in a general account. The account is credited with earnings on the underlying investments and charged for participant withdrawals and administrative expenses. The group annuity contract issuer is contractually obligated to repay the principal and a specified interest rate that is guaranteed to the Plan. The crediting rate is based on a formula established by the contract issuer. The average yield and crediting interest rates were 3.31% and 2.89% for the years ended December 31, 2018 and 2017, respectively. The contract is included in the statements of net assets available for benefits at contract value.

This contract meets the fully benefit-responsive investment contract criteria and therefore is reported at contract value. Contract value is the relevant measure for fully benefit-responsive investment contracts because this is the amount received by participants if they were to initiate permitted transactions under the terms of the Plan. Contract value, as reported to the Plan by MassMutual, represents contributions made under the contract, plus earnings, less participant withdrawals and administrative expenses. Participants may ordinarily direct the withdrawal or transfer of all or a portion of their investment at contract value.

The Plan's ability to receive amounts due is dependent on the issuer's ability to meet its financial obligations. The issuer's ability to meet its contractual obligations may be affected by future economic and regulatory developments.

NOTE 5. INVESTMENT CONTRACT WITH INSURANCE COMPANY (CONTINUED)

Certain events may limit the ability of the Plan to transact at contract value. Such events include but may not be limited to the following: (1) temporary absence; (2) change in position or other occurrence qualifying as a temporary break in service under the Plan; (3) transfer or other change of position resulting in employment by an entity controlling, controlled by, or under other common control with the employer; (4) cessation of an employment relationship resulting from a reorganization, merger, layoff or the sale or discontinuance of all or any part of the Plan sponsor's business; (5) removal from the Plan of one or more groups or classifications of participants; (6) partial or complete Plan termination; or (7) Plan disqualification. Plan administration believes the occurrence of such events that would limit the Plan's ability to transact at contract value is not probable.

NOTE 6. RISKS AND UNCERTAINTIES

The Plan invests in various investment securities. Investment securities are exposed to various risks such as interest rate, market and credit risks. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the values of investment securities will occur in the near term and that such changes could materially affect participants' account balances and amounts reported in the statements of net assets available for benefits.

NOTE 7. PLAN TERMINATION

Although it has not expressed any intent to do so, the Company has the right, under the Plan, to discontinue its contributions at any time and to terminate the Plan subject to the provisions of ERISA. In the event of Plan termination, participants would become 100 percent vested in the Company contribution portion of their account.

NOTE 8. TAX STATUS

The Company adopted a volume submitter prototype plan. The Plan is not required to receive a determination letter directly from the Internal Revenue Service. The Plan has not received a determination specific to the Plan itself. However, the Company and Plan Administrator believes that the Plan is currently designed and being operated in compliance with the applicable requirements of the Code, and therefore believes that the Plan was qualified and the related trust was tax-exempt as of the financial statement date.

Accounting principles generally accepted in the United States of America require the Plan to evaluate tax positions taken by the Plan and recognize a tax liability if the Plan has taken an uncertain position that more likely than not would not be sustained upon examination by tax authorities. The Plan is subject to routine audits by taxing jurisdictions; however, there are currently no audits for any tax periods in progress.

NOTE 9. PARTY-IN-INTEREST TRANSACTIONS

Certain Plan investments are held by MassMutual, which provides recordkeeping services to the Plan. Therefore, these transactions qualify as party-in-interest transactions.

MassMutual provides certain administrative services to the Plan pursuant to a service agreement. Administrative services are primarily paid through the quarterly administrative fee charged to participants.

NOTE 10. REVENUE SHARING ARRANGEMENT

During the year ended December 31, 2017, the Plan entered into a new revenue sharing arrangement with MassMutual. Under the terms of the agreement, excess revenue is used to pay certain investment fees of the Plan. Unused amounts at year end are rebated to Plan participants.

The Plan received $65,389 in excess revenue during the year ended December 31, 2018. $50,994 was used to pay administrative expenses of the Plan and approximately $14,217 was rebated to participant accounts.

The Plan received $99,554 in excess revenue during the year December 31, 2017. $39,500 was used to pay administrative expenses of the Plan and approximately $60,300 was rebated to participant accounts.

NOTE 11. RECONCILIATION OF FINANCIAL STATEMENTS TO FORM 5500

The following is a reconciliation of net assets available for benefits per the financial statements to Form 5500:

	2018	2017
Net assets available for benefits per the financial statements	$ 90,649,332	$ 90,269,187
Less - employer contributions receivable	(1,479,173)	(1,308,110)
Less - accrued dividends	(19,622)	-
Add - contract admin fee payable	19,746	-
Net assets available for benefits per the Form 5500	$ 89,170,283	$ 88,961,077

NOTE 11. RECONCILIATION OF FINANCIAL STATEMENTS TO FORM 5500 (CONTINUED)

The following is a reconciliation of total contributions, total contract administration fees and mutual fund dividends per the financial statements to Form 5500 for the year ended December 31, 2018:

Contributions per the financial statements	$ 9,613,012
Less - employer contribution receivable	(1,479,173)
Add - prior year employer contribution receivable	1,308,110
Contributions per the Form 5500	$ 9,441,949

Administrative fees per the financial statements	$ 297,717
Less - contract admin fee payable	(19,746)
Administration fees per the Form 5500	$ 277,971

Dividends per the financial statements	$ 5,365,483
Add: accrued dividends	(19,622)
Administration fees per the Form 5500	$ 5,345,861

SUPPLEMENTAL SCHEDULES

APPLIED SYSTEMS, INC. RETIREMENT SAVINGS PLAN

SCHEDULE H, LINE 4i

SCHEDULE OF ASSETS (HELD AT END OF YEAR)

DECEMBER 31, 2018

Description of Fund and Investment	Current Value	**
* MassMutual Life Insurance:		
SF Guaranteed Income Account	$ 11,744,242	***
Mutual Funds:		
American Funds EuroPacific Growth Fund	3,801,381	
Franklin Small Cap Value Fund	1,496,612	
Janus Henderson Triton Fund	8,426,724	
JP Morgan Mid Cap Value Fund	1,117,005	
Invesco Oppenheimer Real Estate Fund	1,041,143	
Pioneer Bond Fund	2,824,492	
Premier Disciplined Grth Fd (Barings)	7,220,375	
* MassMutual Select Mid Cap Growth Fund	1,015,024	
T. Rowe Price Retirement 2005 Fund	9,040	
T. Rowe Price Retirement 2010 Fund	42,666	
T. Rowe Price Retirement 2015 Fund	39,052	
T. Rowe Price Retirement 2020 Fund	5,049,970	
T. Rowe Price Retirement 2025 Fund	1,804,821	
T. Rowe Price Retirement 2030 Fund	8,234,367	
T. Rowe Price Retirement 2035 Fund	3,023,713	
T. Rowe Price Retirement 2040 Fund	8,428,869	
T. Rowe Price Retirement 2045 Fund	1,193,876	
T. Rowe Price Retirement 2050 Fund	5,297,703	
T. Rowe Price Retirement 2055 Fund	1,299,187	
T. Rowe Price Retirement 2060 Fund	57,370	
T. Rowe Price Retirement Balanced Fund	49,219	
Vanguard Equity-Income Fund	2,927,098	
Fidelity U.S. Bond Index Fund	1,605,470	
Fidelity 500 Index Fund	6,397,400	
Fidelity International Index Fund	1,362,048	
Fidelity Mid Cap Index Fund	1,436,836	
Fidelity Small Cap Index Fund	984,278	
	76,185,739	
Holding account	29,688	
* Notes receivable from participants - maturing at various dates with interest rates ranging from 5.25% to 7.50%	1,210,614	
Total	$ 89,170,283	

* Represents party-in-interest.
** Cost information not required for investments that are participant-directed.
*** Reported at contract value.

APPLIED SYSTEMS, INC. RETIREMENT SAVINGS PLAN

SCHEDULE H, LINE 4j

SCHEDULE OF REPORTABLE TRANSACTIONS

DECEMBER 31, 2018

Identity of Issuer, Borrower, Lessor, or Similar Party	Description of asset	Purchase Price	Selling Price	Lease Rental	Expense incurred with transaction	Cost of asset	Current value of asset on transaction date	Net gain or (loss)
Janus Henderson	Janus Henderson Triton Fund	$ -	$ 9,448,316	$ -	$ -	$ 8,604,939	$ 9,448,316	$ 843,377
Janus Henderson	Janus Henderson Triton Fund	9,448,316	-	-	-	-	-	-
Mass Mutual	MM Select T.Rowe Price Ret 2020 Fund - M4	-	6,280,660	-	-	4,671,003	6,280,660	1,609,657
Mass Mutual	MM Premier Disciplined Growth Fund - Svc	-	7,472,958	-	-	3,752,568	7,472,958	3,720,390
Mass Mutual	MM Select T. Rowe Price Ret 2050 Fund - M4	-	5,200,443	-	-	3,677,120	5,200,443	1,523,323
Mass Mutual	MM Select T. Rowe Price Ret 2030 Fund - M4	-	8,945,118	-	-	6,113,422	8,945,118	2,831,696
Mass Mutual	MM Select T. Rowe Price Ret 2040 Fund - M4	-	8,738,105	-	-	5,691,166	8,738,105	3,046,939
American Funds	American Funds Euro Pacific Growth Tund	-	4,704,132	-	-	3,332,555	4,704,132	1,371,577
Mass Mutual	MM S&P 500 Index Fund - R5	-	5,896,532	-	-	4,566,443	5,896,532	1,330,089
T. Rowe Price	T. Rowe Price Retirement 2020 Fund	6,280,660	-	-	-	-	-	-
T. Rowe Price	T. Rowe Price Retirement 2030 Fund	8,945,118	-	-	-	-	-	-
T. Rowe Price	T. Rowe Price Retirement 2040 Fund	8,738,105	-	-	-	-	-	-
T. Rowe Price	T. Rowe Price Retirement 2050 Fund	5,200,443	-	-	-	-	-	-
American Funds	Amer Funds EuroPacific Growth Fund	4,704,132	-	-	-	-	-	-
Mass Mutual	Premier Disciplined Frowth Fund (Barings)	7,472,958	-	-	-	-	-	-
Fidelity Investments	Fidelity 500 Index Fund	5,896,532	-	-	-	-	-	-

A Name of Plan	B Three-digit plan Number
Applied Systems, Inc. Retirement Savings Plan	**001**
C Plan sponsor's name as shown on line 2a of Form 5500	**D Employer Identification Number**
Applied Systems, Inc.	**205511045**

Schedule H, line 4i - Schedule of Assets (Held At End of Year)

(a)	(b) Identity of issue, borrower, lessor, or similar party	(c) Description of investment including maturity date, rate of interest,collateral, par, or maturity value	(d) Cost	(e) Current Value
*	MassMutual	Guaranteed Interest Account	11,744,242	11,744,242
*	MassMutual	Holding Account - SIA-LG	0	29,688
*	MassMutual	SIA-BT	0	0
*	MassMutual	SIA-CB	0	0
*	MassMutual	SIA-CO	0	0
*	MassMutual	SIA-DO	0	0
*	MassMutual	SIA-EO	0	0
*	MassMutual	SIA-FO	0	0
*	MassMutual	SIA-FT	0	0
*	MassMutual	SIA-GO	0	0
*	MassMutual	SIA-HO	0	0
*	MassMutual	SIA-LE	0	0
*	MassMutual	SIA-LK	0	0
*	MassMutual	SIA-LT	0	0
*	MassMutual	SIA-NU	0	0
*	MassMutual	SIA-OT	0	0
*	MassMutual	SIA-PT	0	0
*	MassMutual	SIA-QA	0	0
*	MassMutual	SIA-QI	0	0
*	MassMutual	SIA-QJ	0	0
*	MassMutual	SIA-QT	0	0
*	MassMutual	SIA-QV	0	0
*	MassMutual	SIA-QW	0	0
*	MassMutual	SIA-SF	0	0
*	MassMutual	SIA-VB	0	0
*	MassMutual	SIA-WF	0	0
*	MassMutual	SIA-ZX	0	0
*	American Funds	MF-1046	4,758,400	3,801,381
*	Janus	MF-1186	0	0
*	Vanguard	MF-1284	3,401,021	2,927,098
*	Pioneer	MF-1425	2,913,108	2,824,492
*	Janus	MF-2677	9,570,127	8,426,724
*	T. Rowe Price	MF-3145	53,007	49,219
*	T. Rowe Price	MF-3146	46,132	42,666
*	T. Rowe Price	MF-3147	5,536,606	5,049,970
*	T. Rowe Price	MF-3148	9,194,627	8,234,367
*	T. Rowe Price	MF-3149	9,555,922	8,428,869
*	T. Rowe Price	MF-3150	9,688	9,040
*	T. Rowe Price	MF-3151	42,476	39,052
*	T. Rowe Price	MF-3152	1,992,675	1,804,822
*	T. Rowe Price	MF-3153	3,408,823	3,023,713
*	T. Rowe Price	MF-3154	1,353,434	1,193,876
*	T. Rowe Price	MF-3155	6,019,339	5,297,703

*	T. Rowe Price	MF-3156	1,471,921	1,299,187
*	T. Rowe Price	MF-3164	64,262	57,370
*	Fidelity Investments	MF-3625	0	0
*	JP Morgan	MF-3651	1,355,428	1,117,005
*	Fidelity Investments	MF-3818	0	0
*	Fidelity Investments	MF-3819	0	0
*	Fidelity Investments	MF-3833	0	0
*	Fidelity Investments	MF-3848	0	0
*	Fidelity Investments	MF-4401	6,976,399	6,397,400
*	Fidelity Investments	MF-4412	1,168,593	984,278
*	Fidelity Investments	MF-4422	1,569,035	1,605,470
*	Fidelity Investments	MF-4428	1,480,547	1,362,048
*	Fidelity Investments	MF-4431	1,619,993	1,436,836
*	Oppenheimer	MF-CB	1,141,749	1,041,143
*	Franklin/Templeton	MF-JZB	1,945,803	1,496,612
*	MassMutual Premier	MF-MU	9,449,030	7,220,375
*	MassMutual Select	MF-WF	1,163,816	1,015,024
	Participant Loans	5.250000 - 7.500000	0	1,210,614

A Name of Plan	B Three-digit Plan Number
Applied Systems, Inc. Retirement Savings Plan	**001**
C Plan sponsor's name as shown on line 2a of Form 5500	**D Employee Identification Number**
Applied Systems, Inc.	**205511045**

Schedule H, line 4j - Schedule of Reportable Transactions

(a) Identity of party involved	(b) Description of asset (include interest rate and maturity in case of a loan)	(c) Purchase price	(d) Selling price	(e) Lease Rental	(f) Expense incurred with transaction	(g) Cost of asset	(h) Current value of asset on transaction date	(i) Net gain or (loss)
Janus	MF-1186	0	9,448,316		0	8,604,939	9,448,316	843,377
	MF-2677	9,448,316	0		0	0	0	0
MassMutual	SIA-LT	0	6,280,660		0	4,671,003	6,280,660	1,609,657
	SIA-NU	0	7,472,958		0	3,752,568	7,472,958	3,720,390
	SIA-OT	0	5,200,443		0	3,677,120	5,200,443	1,523,323
	SIA-PT	0	8,945,118		0	6,113,422	8,945,118	2,831,696
	SIA-QT	0	8,738,105		0	5,691,166	8,738,105	3,046,939
	SIA-VB	0	4,704,132		0	3,332,555	4,704,132	1,371,577
	SIA-ZX	0	5,896,532		0	4,566,443	5,896,532	1,330,089
T. Rowe Pri	MF-3147	6,280,660	0		0	0	0	0
	MF-3148	8,945,118	0		0	0	0	0
	MF-3149	8,738,105	0		0	0	0	0
	MF-3155	5,200,443	0		0	0	0	0
American F	MF-1046	4,704,132	0		0	0	0	0
MassMutual	MF-MU	7,472,958	0		0	0	0	0
Fidelity Inve	MF-3625	5,896,532	0		0	0	0	0

A Name of Plan	B Three-digit plan Number
Applied Systems, Inc. Retirement Savings Plan	**001**
C Plan sponsor's name as shown on line 2a of Form 5500	**D Employer Identification Number**
Applied Systems, Inc.	**205511045**

Schedule C Formula Description and/or EIC Statement Description

Service Provider Name	Service Provider EIN	Service Provider Address	Formula / EIC Statement
American Funds	951411037		American Funds received estimated Investment Management Fees of 0.41% with respect to plan assets held in the Amer Funds EuroPacific Growth Fund (MR-1046).
American Funds	951411037		American Funds received estimated Investment Management Fees of 0.41% with respect to plan assets held in the EuroPacific Growth (American) separate account (SIA-VB).
Fidelity Investments	043365630		Fidelity Investments received estimated Investment Management Fees of 0.02% with respect to plan assets held in the Fidelity 500 Index Fund (MR-4401).
Fidelity Investments	042466841		Fidelity Investments received estimated Investment Management Fees of 0.03% with respect to plan assets held in the Fidelity Mid Cap Index Fund (MR-4431).
Fidelity Investments	042466841		Fidelity Investments received estimated Investment Management Fees of 0.03% with respect to plan assets held in the Closed Fidelity Mid Cap Index (MR-3818).
Fidelity Investments	042466841		Fidelity Investments received estimated Investment Management Fees of 0.03% with respect to plan assets held in the Fidelity Small Cap Index Fund (MR-4412).
Fidelity Investments	042993075		Fidelity Investments received estimated Investment Management Fees of 0.03% with respect to plan assets held in the Fidelity U.S. Bond Index Fund (MR-4422).
Fidelity Investments	043365630		Fidelity Investments received estimated Investment Management Fees of 0.05% with respect to plan assets held in the Closed Fidelity International (MR-3848).
Fidelity Investments	042466841		Fidelity Investments received estimated Investment Management Fees of 0.03% with respect to plan assets held in the Closed Fidelity Small Cap Inde (MR-3819).
Fidelity Investments	042993075		Fidelity Investments received estimated Investment Management Fees of 0.03% with respect to plan assets held in the Closed Fidelity U.S. Bond Inde (MR-3833).
Fidelity Investments	043365630		Fidelity Investments received estimated Investment Management Fees of 0.02% with respect to plan assets held in the Closed Fidelity 500 Index Fund (MR-3625).
Fidelity Investments	043365630		Fidelity Investments received estimated Investment Management Fees of 0.05% with respect to plan assets held in the Fidelity International Index Fund (MR-4428).
Franklin Templeton	133151768		Franklin/Templeton received estimated Investment Management Fees of 0.59% with respect to plan assets held in the Franklin Small Cap Value Fund (MR-JZB).
Franklin Templeton	133151768		Franklin/Templeton received estimated Investment Management Fees of 0.59% with respect to plan assets held in the Small Cap Value (Franklin) separate account (SIA-SF).
Janus Henderson	840592523		Janus Henderson received estimated Investment Management Fees of 0.64% with respect to plan assets held in the Janus Henderson Triton Fd (MR-1186).
Janus Henderson	840592523		Janus Henderson received estimated Investment Management Fees of 0.64% with respect to plan assets held in the Janus Henderson Triton Fd (MR-2677).
JP Morgan	133963293		JP Morgan received estimated Investment Management Fees of 0.66% with respect to plan assets held in the JP Morgan Mid Cap Value Fund (MR-3651).
JP Morgan	133963293		JP Morgan received estimated Investment Management Fees of 0.66% with respect to plan assets held in the Mid Cap Value (JP Morgan) separate account (SIA-QJ).
Massachusetts Mutual Life Insurance	041590850		Millennium Trust Company, LLC (MTC) paid MassMutual a one-time referral fee of $40 for IRAs with balances of $500 or more, $10 for IRAs with balances between $75 and $500 and $0 for IRAs with balances less than $75.
Massachusetts Mutual Life Insurance Company	041590850		MassMutual provided the Plan with the required written disclosure for float revenue received by MassMutual.
Massachusetts Mutual Life Insurance Company	041590850		MassMutual received estimated Sub-TA Fees of 0.23% with respect to plan assets held in the Pioneer Bond Fund (MF-1425).
Massachusetts Mutual Life Insurance	041590850		MassMutual received estimated Sub-TA Fees of 0.25% with respect to plan assets held in

Massachusetts Mutual Life Insurance Company (MassMutual), 1295 State Street, Springfield, Massachusetts 01111-0001.

Company		the Janus Henderson Triton Fd (MF-1186).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Sub-TA Fees of 0.30% with respect to plan assets held in the Oppenheimer Real Estate Fund (MF-CB).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Sub-TA Fees of 0.25% with respect to plan assets held in the Franklin Small Cap Value Fund (MF-JZB).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Sub-TA Fees of 0.30% with respect to plan assets held in the Real Estate (OFI) separate account (SIA-CB).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Sub-TA Fees of 0.06% with respect to plan assets held in the Bond Index (Northern) separate account (SIA-QW).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated 12b-1 Fees of 0.25% with respect to plan assets held in the Mid Cap Value (JP Morgan) separate account (SIA-QJ).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Sub-TA Fees of 0.06% with respect to plan assets held in the Mid Cap Index (Northern) separate account (SIA-QI).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated 12b-1 Fees of 0.25% with respect to plan assets held in the Small Cap Value (Franklin) separate account (SIA-SF).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Sub-TA Fees of 0.25% with respect to plan assets held in the Mid Cap Value (JP Morgan) separate account (SIA-QJ).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Sub-TA Fees of 0.06% with respect to plan assets held in the Small Cap Index (Northern) separate account (SIA-QV).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Sub-TA Fees of 0.25% with respect to plan assets held in the Small Cap Value (Franklin) separate account (SIA-SF).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated 12b-1 Fees of 0.25% with respect to plan assets held in the MM Sel T. Rowe Price Ret Bal separate account (SIA-BT).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated 12b-1 Fees of 0.25% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2005 separate account (SIA-CO).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated 12b-1 Fees of 0.25% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2010 separate account (SIA-FT).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated 12b-1 Fees of 0.25% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2015 separate account (SIA-DO).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated 12b-1 Fees of 0.25% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2020 separate account (SIA-LT).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated 12b-1 Fees of 0.25% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2025 separate account (SIA-EO).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated 12b-1 Fees of 0.25% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2030 separate account (SIA-PT).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated 12b-1 Fees of 0.25% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2035 separate account (SIA-FO).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated 12b-1 Fees of 0.25% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2040 separate account (SIA-QT).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated 12b-1 Fees of 0.25% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2045 separate account (SIA-GO).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated 12b-1 Fees of 0.25% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2050 separate account (SIA-OT).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated 12b-1 Fees of 0.25% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2055 separate account (SIA-HO).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated 12b-1 Fees of 0.50% with respect to plan assets held in the EuroPacific Growth (American) separate account (SIA-VB).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Sub-TA Fees of 0.06% with respect to plan assets held in the Intl Equity Index (Northern) separate account (SIA-QA).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Sub-TA Fees of 0.15% with respect to plan assets held in the EuroPacific Growth (American) separate account (SIA-VB).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Investment Management Fees of 0.45% with respect to plan assets held in the Premier Disciplined Gth Fd(Barings) (MR-MU).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Investment Management Fees of 0.69% with respect to plan assets held in the Select Mid Cap Gr Fd (TRP/Frontier) (MR-WF).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Administrative Fees of 0.35% with respect to plan assets held in the Premier Core Bond (Barings) separate account (SIA-LE).
Massachusetts Mutual Life Insurance	041590850	MassMutual received estimated Administrative Fees of 0.15% with respect to plan assets

Company		held in the MM Sel T. Rowe Price Ret Bal separate account (SIA-BT).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Administrative Fees of 0.15% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2005 separate account (SIA-CO).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Administrative Fees of 0.15% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2010 separate account (SIA-FT).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Administrative Fees of 0.15% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2015 separate account (SIA-DO).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Administrative Fees of 0.15% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2020 separate account (SIA-LT).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Administrative Fees of 0.15% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2025 separate account (SIA-EO).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Administrative Fees of 0.15% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2030 separate account (SIA-PT).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Administrative Fees of 0.15% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2035 separate account (SIA-FO).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Administrative Fees of 0.15% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2040 separate account (SIA-QT).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Administrative Fees of 0.15% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2045 separate account (SIA-GO).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Administrative Fees of 0.15% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2050 separate account (SIA-OT).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Administrative Fees of 0.15% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2055 separate account (SIA-HO).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Administrative Fees of 0.15% with respect to plan assets held in the Select Mid Cap Gr (TRP/Frontier) separate account (SIA-WF).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Administrative Fees of 0.10% with respect to plan assets held in the MM S&P 500 Index (Northern Trust) separate account (SIA-ZX).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Administrative Fees of 0.15% with respect to plan assets held in the Premier Disciplined Gth Fd(Barings) separate account (MF-MU).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Administrative Fees of 0.15% with respect to plan assets held in the Select Mid Cap Gr Fd (TRP/Frontier) separate account (MF-WF).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Administrative Fees of 0.25% with respect to plan assets held in the Premier Disciplined Grth (Barings) separate account (SIA-NU).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Administrative Fees of 0.35% with respect to plan assets held in the Sel Fundamental Val (BrwHnly/BsPt) separate account (SIA-LK).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Investment Management Fees of 0.38% with respect to plan assets held in the Premier Core Bond (Barings) separate account (SIA-LE).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Administrative Fees of 0.10% with respect to plan assets held in the Prem U.S. Govt Money Mrkt (Barings) separate account (SIA-LG).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Investment Management Fees of 0.39% with respect to plan assets held in the MM Sel T. Rowe Price Ret Bal separate account (SIA-BT).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Investment Management Fees of 0.5% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2025 separate account (SIA-EO).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Investment Management Fees of 0.41% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2005 separate account (SIA-CO).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Investment Management Fees of 0.41% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2010 separate account (SIA-FT).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Investment Management Fees of 0.44% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2015 separate account (SIA-DO).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Investment Management Fees of 0.47% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2020 separate account (SIA-LT).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Investment Management Fees of 0.53% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2030 separate account (SIA-PT).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Investment Management Fees of 0.55% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2035 separate account (SIA-FO).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Investment Management Fees of 0.57% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2040 separate account (SIA-QT).
Massachusetts Mutual Life Insurance	041590850	MassMutual received estimated Investment Management Fees of 0.58% with respect to

Company		plan assets held in the MM Sel T. Rowe Price Ret 2045 separate account (SIA-GO).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Investment Management Fees of 0.58% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2050 separate account (SIA-OT).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Investment Management Fees of 0.58% with respect to plan assets held in the MM Sel T. Rowe Price Ret 2055 separate account (SIA-HO).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Investment Management Fees of 0.69% with respect to plan assets held in the Select Mid Cap Gr (TRP/Frontier) separate account (SIA-WF).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Investment Management Fees of 0.09% with respect to plan assets held in the MM S&P 500 Index (Northern Trust) separate account (SIA-ZX).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Investment Management Fees of 0.6% with respect to plan assets held in the Sel Fundamental Val (BrwHnly/BsPt) separate account (SIA-LK).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Investment Management Fees of 0.45% with respect to plan assets held in the Premier Disciplined Grth (Barings) separate account (SIA-NU).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual received estimated Investment Management Fees of 0.35% with respect to plan assets held in the Prem U.S. Govt Money Mrkt (Barings) separate account (SIA-LG).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual provided the plan with the required written disclosure for soft dollar compensation received by the subadviser with respect to Premier Disciplined Gth Fd(Barings) (MR-MU).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual provided the plan with the required written disclosure for soft dollar compensation received by the subadviser with respect to Select Mid Cap Gr Fd (TRP/Frontier) (MR-WF).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual provided the plan with the required written disclosure for soft dollar compensation received by the subadviser with respect to MM Sel T. Rowe Price Ret Bal separate account (SIA-BT).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual provided the plan with the required written disclosure for soft dollar compensation received by the subadviser with respect to MM Sel T. Rowe Price Ret 2005 separate account (SIA-CO).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual provided the plan with the required written disclosure for soft dollar compensation received by the subadviser with respect to MM Sel T. Rowe Price Ret 2010 separate account (SIA-FT).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual provided the plan with the required written disclosure for soft dollar compensation received by the subadviser with respect to MM Sel T. Rowe Price Ret 2015 separate account (SIA-DO).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual provided the plan with the required written disclosure for soft dollar compensation received by the subadviser with respect to MM Sel T. Rowe Price Ret 2020 separate account (SIA-LT).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual provided the plan with the required written disclosure for soft dollar compensation received by the subadviser with respect to MM Sel T. Rowe Price Ret 2025 separate account (SIA-EO).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual provided the plan with the required written disclosure for soft dollar compensation received by the subadviser with respect to MM Sel T. Rowe Price Ret 2030 separate account (SIA-PT).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual provided the plan with the required written disclosure for soft dollar compensation received by the subadviser with respect to MM Sel T. Rowe Price Ret 2035 separate account (SIA-FO).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual provided the plan with the required written disclosure for soft dollar compensation received by the subadviser with respect to MM Sel T. Rowe Price Ret 2040 separate account (SIA-QT).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual provided the plan with the required written disclosure for soft dollar compensation received by the subadviser with respect to MM Sel T. Rowe Price Ret 2045 separate account (SIA-GO).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual provided the plan with the required written disclosure for soft dollar compensation received by the subadviser with respect to MM Sel T. Rowe Price Ret 2050 separate account (SIA-OT).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual provided the plan with the required written disclosure for soft dollar compensation received by the subadviser with respect to MM Sel T. Rowe Price Ret 2055 separate account (SIA-HO).
Massachusetts Mutual Life Insurance	041590850	MassMutual provided the plan with the required written disclosure for soft dollar

Company		compensation received by the subadviser with respect to Select Mid Cap Gr (TRP/Frontier) separate account (SIA-WF).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual provided the plan with the required written disclosure for soft dollar compensation received by the subadviser with respect to Premier Disciplined Grth (Barings) separate account (SIA-NU).
Massachusetts Mutual Life Insurance Company	041590850	MassMutual provided the plan with the required written disclosure for soft dollar compensation received by the subadviser with respect to Sel Fundamental Val (BrwHnly/BsPt) separate account (SIA-LK).
Northern Funds	363608252	Northern Funds received estimated Investment Management Fees of 0.13% with respect to plan assets held in the Bond Index (Northern) separate account (SIA-QW).
Northern Funds	363608252	Northern Funds received estimated Investment Management Fees of 0.13% with respect to plan assets held in the Mid Cap Index (Northern) separate account (SIA-QI).
Northern Funds	363608252	Northern Funds received estimated Investment Management Fees of 0.13% with respect to plan assets held in the Small Cap Index (Northern) separate account (SIA-QV).
Northern Funds	363608252	Northern Funds received estimated Investment Management Fees of 0.18% with respect to plan assets held in the Intl Equity Index (Northern) separate account (SIA-QA).
Oppenheimer	223849391	Oppenheimer received estimated Investment Management Fees of 0.88% with respect to plan assets held in the Oppenheimer Real Estate Fund (MR-CB).
Oppenheimer	223849391	Oppenheimer received estimated Investment Management Fees of 0.88% with respect to plan assets held in the Real Estate (OFI) separate account (SIA-CB).
Pioneer	042652279	Pioneer received estimated Investment Management Fees of 0.29% with respect to plan assets held in the Pioneer Bond Fund (MR-1425).
T. Rowe Price	521151266	T. Rowe Price received estimated Investment Management Fees of 0.37% with respect to plan assets held in the T. Rowe Price Retirement Bal Fund (MR-3145).
T. Rowe Price	521151266	T. Rowe Price received estimated Investment Management Fees of 0.05% with respect to plan assets held in the T. Rowe Price Retirement 2035 Fund (MR-3153).
T. Rowe Price	521151266	T. Rowe Price received estimated Investment Management Fees of 0.39% with respect to plan assets held in the T. Rowe Price Retirement 2005 Fund (MR-3150).
T. Rowe Price	521151266	T. Rowe Price received estimated Investment Management Fees of 0.39% with respect to plan assets held in the T. Rowe Price Retirement 2010 Fund (MR-3146).
T. Rowe Price	521151266	T. Rowe Price received estimated Investment Management Fees of 0.42% with respect to plan assets held in the T. Rowe Price Retirement 2015 Fund (MR-3151).
T. Rowe Price	521151266	T. Rowe Price received estimated Investment Management Fees of 0.46% with respect to plan assets held in the T. Rowe Price Retirement 2020 Fund (MR-3147).
T. Rowe Price	521151266	T. Rowe Price received estimated Investment Management Fees of 0.49% with respect to plan assets held in the T. Rowe Price Retirement 2025 Fund (MR-3152).
T. Rowe Price	521151266	T. Rowe Price received estimated Investment Management Fees of 0.52% with respect to plan assets held in the T. Rowe Price Retirement 2030 Fund (MR-3148).
T. Rowe Price	521151266	T. Rowe Price received estimated Investment Management Fees of 0.57% with respect to plan assets held in the T. Rowe Price Retirement 2040 Fund (MR-3149).
T. Rowe Price	521151266	T. Rowe Price received estimated Investment Management Fees of 0.58% with respect to plan assets held in the T. Rowe Price Retirement 2045 Fund (MR-3154).
T. Rowe Price	521151266	T. Rowe Price received estimated Investment Management Fees of 0.58% with respect to plan assets held in the T. Rowe Price Retirement 2050 Fund (MR-3155).
T. Rowe Price	521151266	T. Rowe Price received estimated Investment Management Fees of 0.58% with respect to plan assets held in the T. Rowe Price Retirement 2055 Fund (MR-3156).
T. Rowe Price	521151266	T. Rowe Price received estimated Investment Management Fees of 0.58% with respect to plan assets held in the T. Rowe Price Retirement 2060 Fund (MR-3164).
Vanguard	231945930	Vanguard received estimated Investment Management Fees of 0.16% with respect to plan assets held in the Vanguard Equity-Income Fund (MR-1284).

MassMutual

Schedule C Soft Dollar Compensation
Eligible Indirect Compensation Statement

Mutual fund investments of the plan (whether direct or indirect through a separate investment account) may have soft dollar arrangements pursuant to which the investment advisor or sub-advisor to the mutual fund (and/or its affiliates) may direct trades to certain brokers in exchange for research and other services, other than just trade execution. For plans investing directly or indirectly in the MassMutual Premier or Select Funds, MassMutual provided the required written disclosure regarding soft dollar compensation on the Schedule C Formula Description and/or EIC Statement Description Attachment. For all other mutual funds, MassMutual provided the required written disclosure in the Statement of Additional Information ("SAI").

For additional information on soft dollar compensation, refer to the section of the mutual fund's SAI that discusses brokerage allocation and other practices.